

Efficacy Review

Date: November 3, 2009

Efficacy Reviewer: Clayton Myers, Ph.D., Entomologist, RD-IB
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Risk Manager Rev.: BeWanda Alexander

Product: Biflex NCT Insecticide

EPA Reg. #: 279-4269

A.I.'s: Bifenthrin (23.4%)

Decision #: 416936

DP #: 367571

Submission: R340, Amendment, Non-fast track. Efficacy data submitted and cited in support of additional claims

MRIDs: Submitted: 47802401

Cited: 44637901, 44137401, 44638801, 44891904, 44671701, 44891907, 44891901, 44021901, 44891906, 44891905, 44137402, 44891908, 44891903, 44891902

GLP: Not all

MRID 47802401

Title: Efficacy of Bifenthrin as a Grass Sod Treatment; Mississippi and Arkansas, Spring 2008

Materials and Methods: Field studies at 2 working sod farms, spring 2008. 1 acre plots (with ¼ acre circular efficacy plots in the middle) were treated twice (at a week interval) with 0.2lbs ai/acre rate of bifenthrin, as labeled for IFA quarantine treatments for grass sod on the current submission.

Guideline: OPPTS 810.3100

Study Summary of the Results:

All bifenthrin treatments (including the proposed dual split applications of 2 lbs ai/acre at a week interval) provided 100% control of imported fire ants within 4 weeks, when compared to an untreated control, and maintained that level of control through 20 weeks after application, in both the Mississippi and Arkansas studies.

Entomologist's Observations/Discussion:

1. The submitted data is adequate to support the red imported fire ant claim for quarantine use on treated sod, with 2 applications (separated by 7 days) of the product at the rate of 0.2 lbs ai/acre.
2. Because the treatments required up to 4 weeks to control imported fire ants, the label statement must clarify that the treatment requires a 4 week exposure period after treatment and that the quarantine certification is valid for 16 weeks after that period.

MRID 44891901 (cited)

Title: Efficacy of Bifenthrin Liquid Applications Towards Stinging Hymenopterous Insects

Materials and Methods: Field trial against honeybees (and 2 other non-public health species). Bifenthrin was applied at various rates to replicated plots of grass at a volume of 25 gallons per acre. Bees were exposed to treated residues at 2 hours and 8 hours after treatment and mortality was assessed.

Guideline: OPPTS 810.3500

Study Summary of the Results:

For rates of 0.08 and 0.1 lbs ai/acre, honeybee mortality exceeded 90% when exposed to 2 hour old residue, but not at 8 hours.

Entomologist's Observations/Discussion:

3. General claims for stinging hymenoptera (or general 'bees and wasps' claims) cannot be supported solely on the basis of data from one honeybee control study. In order to support the claim as listed, residual data from the lab or field needs to be submitted for honey bees (*Apis mellifera*), bumble bees (*Bombus* sp.), yellow jackets (*Vespula* sp.), hornets (*Vespa* sp.), and paper wasps (*Polistes* sp.), showing adequate control at label rates of the product, after 5 minutes of exposure to residues. Mortality must be confirmed 24 hours after the initial exposure. Claims against specific species can be supported by species-specific data.
4. Even for a species-specific honeybee claim alone, however, the cited data does not support a claim, as control failure was observed only 8 hours after bifenthrin application.

Overall Review of Label Claims from all Cited Studies:

5. Claims against red imported fire ants are supported, and the treatment of grass sod for quarantine treatment is also supported.
6. Claims against bees and wasps are not supported and all claims and directions for use against these pests must either be removed from the label, or supported with conditional data as described above.
7. Other efficacy claims were already approved on previous labels and/or approved via prior review of cited data.
8. General note on the "Resistance" statement on page 3: The Agency will soon be moving forward to require these statements for Ag Use Products. In addition to the statement already in place, the applicant should revise the label to provide the IRAC grouping number (3 for pyrethroids) on the front panel of the label and again in the RM statement on page 3, written in accordance with the guidelines of PR Notice 2001-5.

Line by Line Label Claims:

Imported Fire Ants (grass sod for quarantine treatment): Acceptable

Ground-nesting (solitary) bees and wasps (including Bumble bees, Sweat Bees, Mining Bees, Digger Bees, Leafcutting Bees, Digger or Threadwaisted Wasps) . . . 0.32 fl. oz/1000 square feet:
Unacceptable

(Fire Ants) Biflex® NCT Insecticide is approved . . . or as a broadcast application on grass sod:
Acceptable

(Fire Ants) For treatment of grass sod: apply Biflex NCT insecticide as a broadcast treatment. . . . Make two applications of 0.32 fl oz per 1000 sq ft (0.2 lbs AI per acre) seven days apart. This application will provide control within four weeks followed by 16 weeks of certification:
Acceptable